

# ***Field Artillery and Joint Fires Conference***

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**MG Michael D. Maples**  
**Chief of Field Artillery**

The background of the slide is a dramatic, high-contrast image of an explosion or a large fire. Bright, white and yellow flames and smoke billow upwards from a dark, smoky base, creating a sense of intense energy and power. The overall color palette is dominated by dark blues, blacks, and oranges from the fire.

# ***Agenda***

Conference Objectives

Key Points

Driving Change

CSA Focus Areas

Transformation

Joint Fires and Effects Training

Operation Iraqi Freedom (OIF)

Field Artillery Focus Areas

Field Artillery Systems

**Create the Thunder!**



# ***2003 Field Artillery and Joint Fires Conference Objectives***

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- To address the readiness and operational needs of Field Artillery units
- To report on the contribution of Field Artillery units in Operation Iraqi Freedom
- To inform on the development of Future Force Fires and Effects concepts
- To understand developing Joint Fires Concepts
- To explore, with industry, technological developments that contribute to Future Force capabilities
- To explore ways to achieve the integration of Joint Fires and Effects to achieve Battlefield Dominance



# *Key Points*

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- The Effects of **Joint Fires** including **Artillery** win wars
- The FA needs to become the **Joint Fires Integrator**
- **Field Artillery** fires contributed significantly to success in Operation Iraqi Freedom
- Transformation to the **Future Force** is ongoing now
- We must train properly with all **Fires and Effects**
- The **Army** and the **Field Artillery** are changing
- Indirect Fires and Effects will be **increasingly important** in Major Combat Operations (MCO)





# ***Driving Change***

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Soldier Requirements

Current Force Requirements

CSA Focus Areas

Transformation Guidance

Required Future Capabilities

Technology Developments

Operation Iraqi Freedom Lessons Learned

**Integrated Joint Fires can Achieve  
Battlefield Dominance**



# ***CSA Focus Areas***

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## **Train and Equip Soldiers and Grow Leaders**

- Develop Soldiers with Warrior Ethos
- Prepare Future Generations of Senior Leaders (Bench)
- Train/Educate Army Members of the Joint Team
- Focus Training (Context, Joint, Expeditionary)

An Army at War  
Relevant and Ready

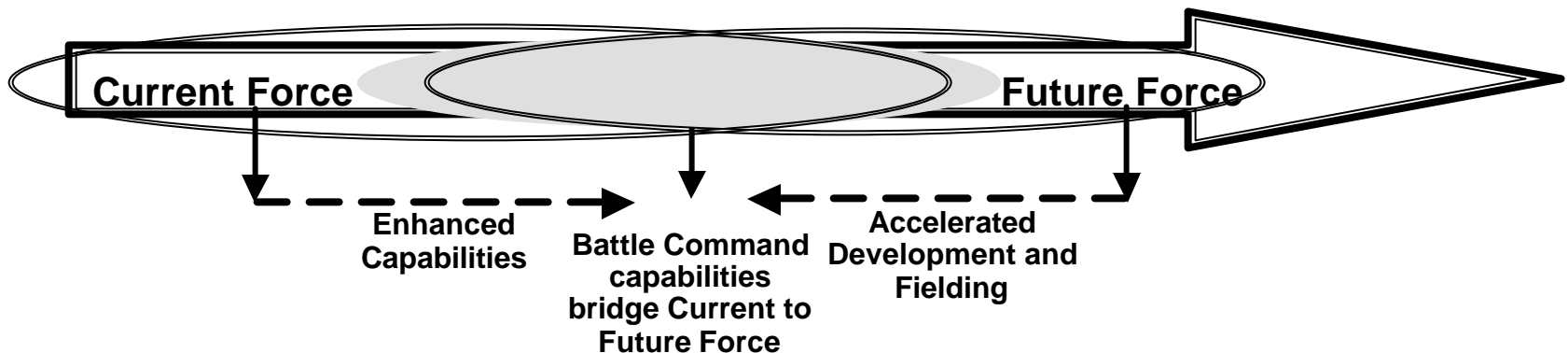


# ***CSA Focus Areas***

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## **Provide Relevant and Ready Land Power**

- **Leverage/Enable Interdependent, Network-Centric Warfare**
- **Create Modular, Capabilities-Based Unit Designs**
- **Develop a Joint and Expeditionary Mindset**
- **Align AC/RC within the Current Security Context**
- **Exploit Army Aviation Role on the Joint Battlefield**





# ***CSA Focus Areas***

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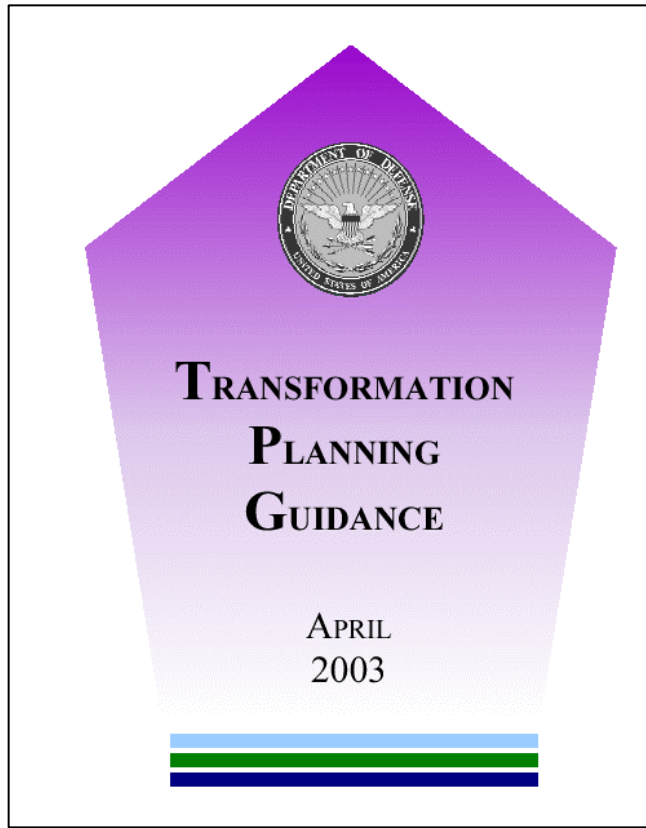
## **Enable the Force**

- Ensure Unit Stability, Continuity and Predictability
- Enhance Installation Ability to Project Power and Support Families
- Redesign Resource Processes to be Flexible, Responsive and Timely
- Clarify Authorities, Responsibilities and Accountability
- Communicate the Army Story

An Army at War  
Relevant and Ready



# *Transformation Planning Guidance*



***“the outcome we must achieve:***

***fundamentally joint, network-centric, distributed forces capable of rapid decision superiority and massed effects across the battlespace.”***

***Secretary Rumsfeld***

**Joint – Network Centric- Massed Effects**



# Future Force: Fires and Effects Concepts

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- ✓ Full Integration of **joint, interagency and multinational** capabilities
- ✓ **Networked Fires** including pervasive target acquisition and ISR
- ✓ **Close supporting** fires/effects and **counterstrike** to support tactical engagements and battles
- ✓ **Operational** and **Shaping** fires/effects to **destroy** key enemy capabilities, **isolate** battlespace and **deny** enemy ability to reinforce
- ✓ A full range of **lethal and non-lethal** effects for any **environment**
- ✓ **Fires and Effects Organizations** that are modular and tailorable
- ✓ **Fires and Effects Cells** to integrate effects at all levels

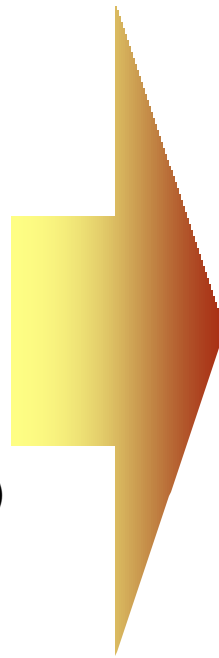
**Future Force must have continuous all-weather and all-terrain fires and effects, joint and land-based, enabled by Networked Fires and pervasive, redundant target acquisition and ISR**



# ***Transforming Fires***

## **To Achieve**

Networked through battle command  
Fully interoperable with Joint systems  
Dynamic Sensor to Shooter linkages  
Strategic and tactical mobility  
Fully Integrated with maneuver  
Lethal (through precision and volume)  
Precise effects with area options  
Reduced logistics requirement  
Ability to mass effects; lethal and non-lethal  
24/7, all weather & all terrain



## **Requires**

### **C4ISR**

Battle Command  
Networked Fires

### **Targeting Capabilities**

"Space to Mud"  
Complementary to Delivery

### **Delivery Platforms**

Full range of systems  
Deployable

Joint and Multinational

### **Munitions Capabilities**

Precision with area options  
Non-lethal effects  
Discriminating  
All environments



# ***A Mix of Effects Capabilities***

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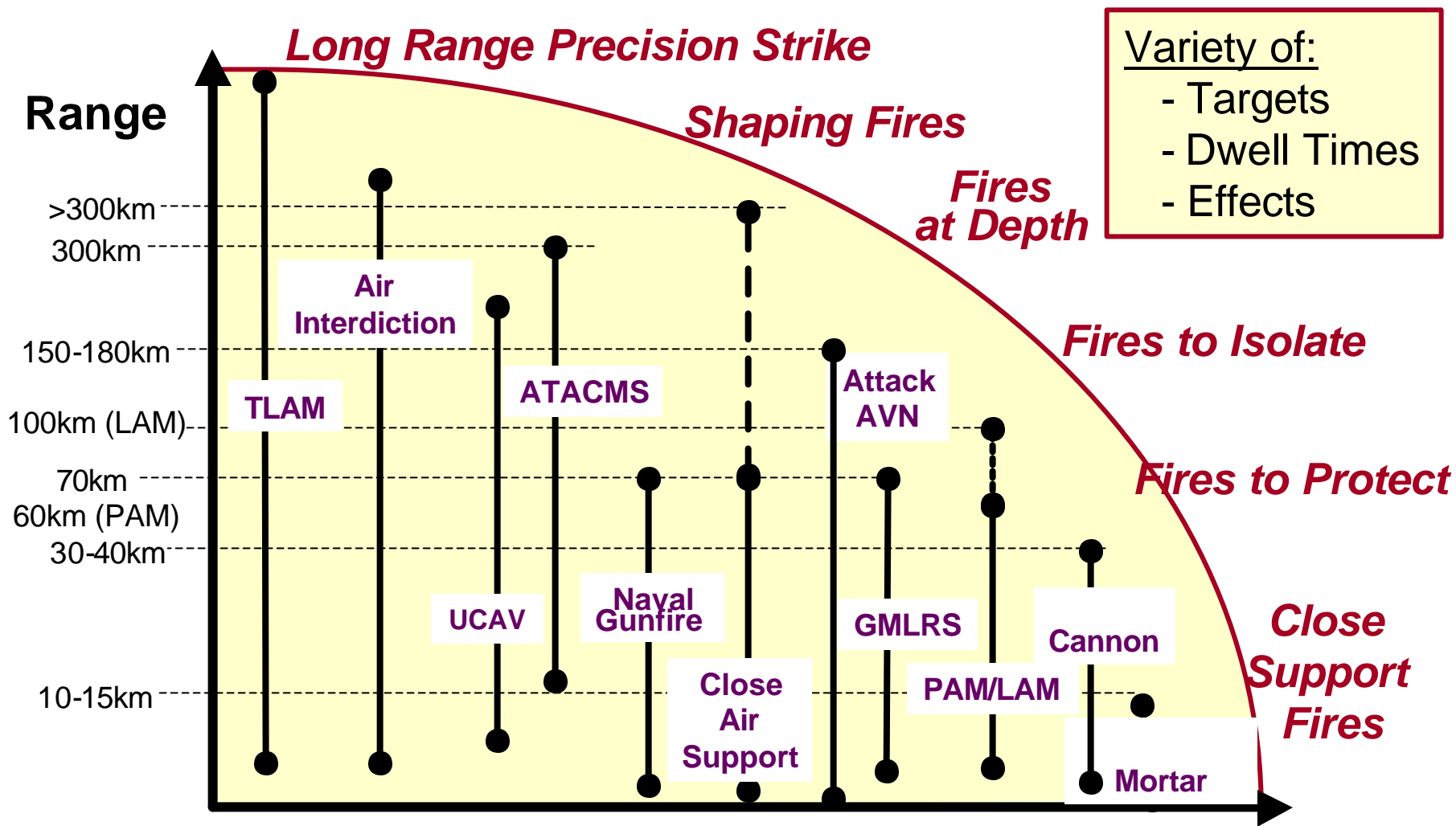
- **Effects capabilities must account for Variables:**
  - Availability of delivery means
  - Responsiveness and Risk
  - Environment / Weather
  - Range capability
  - Threat / Dwell Time
  - Effect Required
- The full range of Fires and Effects capabilities - land based fires, air delivered munitions, and rotary wing attack and other effects producing capabilities - provide **complementary precision attack capabilities**

**Must Ensure Responsive Effects Against  
All Target Sets in All Environments**





# Joint Fires Capabilities

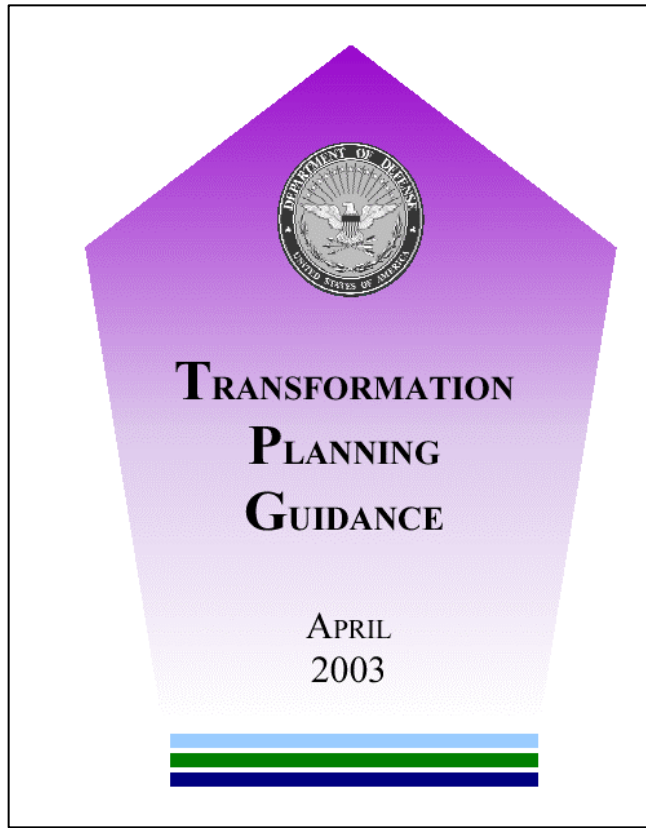


**Integrating the Full Range of Joint Fires to Produce Massed Effects**



# Transformation Planning Guidance

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## Transforming Joint Training

*“... **training** enables the warfighter to maximize the potential of technologically advanced platforms ...we must **transform our training** in the same way we transform the rest of the force.”*

**The Transformation of Joint Fires and Effects Training is Happening Now!**



# ***Fires and Effects Training***

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## **Operations Enduring Freedom and Iraqi Freedom**

... demonstrated the **warfighting potential** of **Integrated Joint Fires!**

... and that **complex military operations** must be trained:

- ✓ Coordinating **Joint Attack of Targets**
- ✓ Synchronizing **Fires with Maneuver**
- ✓ Land Fires to Support **Aviation**
- ✓ Synergistic **Fires and Effects**
- ✓ **Time Sensitive Targeting**
- ✓ **Deconfliction** of Fires

We currently rely on service component schools to inform on service capabilities, and train component elements of the joint fires team

Joint Forces that “train like you fight and fight like you train”

**The Joint Force Will Require Training on the Integration, Coordination and Application of Joint Fires**



# ***Joint Fires and Effects Trainer System (JFETS)***

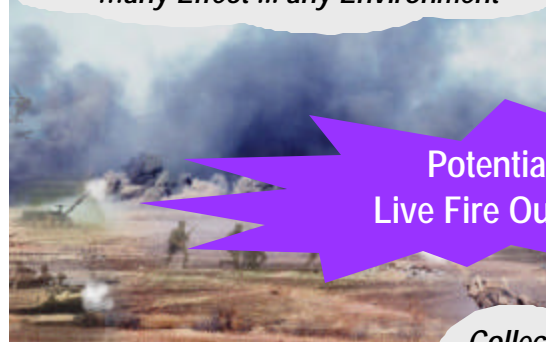
Joint Training Center for Fires  
and Effects Integration



*Focused on Individual and  
Battle Staff Training  
at the Tactical Level*

**Linked to Simulations  
to Replicate Effects**

*Produce a Universal Observer for  
...any Effect ... any Environment*



**Potential for  
Live Fire Outcomes**

**Replicate Aural and  
Visual Conditions**

**Immersive and  
Adaptable Virtual  
Environment**

*Collective Training Of Fires  
Integration For Battle Staffs*  
-All Services  
-Joint And Multinational  
- Special Operations

***JFETS – Transformational Training for Joint Fires and Effects Integration***



# Joint Fires and Effects Trainer System (JFETS)



A cooperative effort between the **Institute for Creative Technologies (ICT)** and **The U.S. Army Field Artillery Center** to create a Joint Fires and Effects Training capability

**(AAR) After Action Report Module** The AAR provides the trainee with a synopsis of the training session in any one of the modules where he participates

**(OTM) Open Terrain Module** The Universal Observer must master the skills necessary to sense high-payoff targets and engage the adversary with an appropriate mix of Joint fires and effects

**AAR**



**UTM**

**FECM**

**OTM**

**EEA**

**(UTM) Urban Terrain Module** Employment of fires and effects in urban terrain is the most challenging. The requirement to limit collateral damage and non-combatant casualties places tremendous demands on the observer

**(FECM) Fires and Effects Command Module** The FECM trains commanders and battle staffs to plan and coordinate the application of lethal and non-lethal Joint capabilities. The FECM enables Joint, Interagency and Multinational Fires and Effects coordination and integration

**(EEA) Entry Exhibit Area** The EEA provides a welcome area for visitors and trainees to receive initial briefings on the use of the facility

**JFETS – Any Observer, Any Effect, in Any Environment**



A collection of 18 military unit crests and emblems, including the 1st Airborne, 4th Marines, 11th Marines, and others, displayed in a grid-like arrangement. The crests feature various symbols such as eagles, crosses, stripes, and specific unit insignia, often accompanied by text like 'AIRBORNE', '4TH MARINES', and 'MISSION ACCOMPLISHED'.

# The Field Artillery was crucial to OIF success!





# ***Operation Iraqi Freedom***

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The **Field Artillery** contribution in OIF:

- 1 Corps Artillery
- 2 Division Artilleries and 2 FA Brigade HQs
- 12 FA Battalions
- ✓ 62 Howitzers (155mm) fired 14,500 rounds
- ✓ 62 Howitzers (105mm) fired 4,107 rounds
- ✓ 72 MLRS launched 857 rockets / 453 ATACMS
- ✓ USMC Artillery fired almost 20,000 rounds
- ❖ DivArty, FAB and 7 FA battalions added for SASO

**"The Field Artillery proved to be the timeliest response to enemy actions"**



# ***Operation Iraqi Freedom***

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- **Joint Integration/Close Air Support (CAS)** much improved
- The **Combined Arms Team** was very successful
- Multiple **C2 Systems** were a challenge to integrate
- Greater access to **indirect fires** needed by all soldiers
- **Cannon Artillery** provided very responsive **close support**
  - Cannons were **critical** in **urban operations**
  - **HE / VT; SADARM; UXO**
- **Rocket and Missile** systems set the conditions
  - **ATACMS** – critical Joint operational fires
  - **MLRS and Firefinder** = deadly counterfire
  - **SOF / HIMARS** = lethal sensor to shooter

**"Artillery Fires Saved Our Ass!" 3-7 CAV**





# ***OIF Implications***

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- **Doctrine**
  - Must improve **Joint Fires Doctrine**
  - Must refine **targeting** for the **COE**
  - Must maintain **Offensive** focus
  - Must develop **SASO capabilities**
- **Organizations**
  - Must increase **modular** capabilities
  - Must establish **Fires and Effects Cells**
  - Must increase **Target Acquisition** units
  - Must improve **CSS Support**

**Joint Fires Doctrine – Modular Organizations**



# ***OIF Implications***

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- **Training**

- Must sustain **realistic training** systems
- Must **replicate fires** and include Joint in CTCs
- Must train **transitions** – MCO to SASO
- Must train **Universal Observers** – all fires

- **Leaders**

- Sustain Leader Development Programs to produce **adaptive** leaders
- Leaders must be experts on **Joint Fires Integration**

**Leaders at all Levels Competent in the Application of the Full Range of Fires and Effects**



# ***OIF Implications***

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- **Materiel**

- Must have **long range communications** and improved C2 vehicles
- Must simplify **digital systems**
- Must have longer **range** with **precision**
- Must improve **targeting** capabilities – mounted and dismounted
- Must have greater **self-protection** capabilities
- Must improve **munitions** capabilities and solve UXO

**"We need the right balance of precision munitions and precise suppressive fires." V Corps CG**



# ***Operation Iraqi Freedom***

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“Analysis will demonstrate that the  
**dominant tactical weapon**  
on the Iraqi Freedom Battlefield was **Artillery.**”

“**Artillery** responds in seconds, lands in minutes, is  
impervious to weather, never runs out of fuel,  
provides smoke cover, illuminates targets, and  
suppresses the fires of poorly located and identified  
enemy guns.”

“**Joint Firepower** Wins Wars.”

**Joint Fires and Field Artillery can be Decisive!**



# ***Field Artillery Center and School Focus Areas***

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- **Support Operationally Engaged and Mobilized Forces**
  - Fielded M270A1; SADARM; AFATDS and VER 6.3.1
  - Supported ADOCS interface; HIMARS; ATACMS Unitary
  - Dismounted Optics; Lightweight Counter-Mortar Radar
  - Field Artillery Unit Mobilizations
  - Reach Back Expertise for the Warfighter

**Priority of Fires to Committed Forces**



# ***Field Artillery Center and School Focus Areas***

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- **Support CSA Focus Areas**
  - Participate in CSA Focus Area Studies
  - Develop Organizational Modularity
  - Soldier as a System
  - Rapid Fielding Initiative (RFI)
  - Rapid Equipping Force (REF)
  - HIMARS Sensor to Shooter Test
  - HIMARS Airlanding Test

**Near Term Capabilities for Soldiers and Units**



# ***Field Artillery Center and School Focus Areas***

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- **Transform Field Artillery Training and Education**
  - Develop Warrior Ethos
  - Provide Demanding Realistic Training (Redleg War; Walking Shoots)
  - Introduce Contemporary Operating Environment (COE)
  - OES/ WOES/ NCOES Transformation
  - Basic Officer Leadership Course (BOLC)
  - Stryker / Joint / SOF integration
  - Develop Field Artillery TADSS
    - STRICOM Representative
    - Call for Fire Trainer; add Mortar, CAS, AC130
    - FSCATT
  - Joint Fires Integration Course (Spring 04)
  - JCAS Training and Exercise

**Soldiers and Leaders Ready to Contribute on Arrival**



# ***Field Artillery Center and School Focus Areas***

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- **Continue Transformation Efforts**
  - Stryker Brigade Issues
  - Fires & Effects O&O Document
  - Unit of Employment Fires Organizations
  - Developing Forced Entry Requirements and Capabilities
  - Multifunctional Units of Action
  - NLOS Cannon Concept Technology Demonstration
  - Capabilities development: NLOS-LS; MMR; UAV; Excalibur

**Developing Transformational Capabilities for the Future Force**





# ***Field Artillery Center and School Focus Areas***

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- **Conduct Experimentation / S & T Effort**
  - Battle Lab Collaborative Environment
  - Validate Future Force Requirements
  - Validate Networked Fires Requirements
  - Non-Lethal Capabilities
    - Personnel Suppression
    - Equipment Disablement
    - Area Denial
  - Improve Replication of Fires
    - Suppression Methodology
    - Smart and Precision Munitions

**Enhanced Battle Lab for Fires and Effects**



# ***Field Artillery Center and School Focus Areas***

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- **Develop Field Artillery Systems, Capabilities and Organizations**
  - Modernize the Force
    - M270A1 / LW155 / AFATDS / Targeting
  - Maintain Complementary Systems
    - Phoenix – Q47/ Profiler / Enhanced Q36
    - Advanced Munitions Capabilities
  - Maintain Relevant Force Structure
    - AC / RC Mix
    - TAA 11; TAA 13

**Accelerate the Fielding of Indirect Fires Capabilities**



# ***Field Artillery Center and School Focus Areas***

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- **Develop Joint Fires Role**
  - Engage in Joint Fires Initiative
  - Joint Fires Working Group
  - Universal Observers
  - Joint Fires and Effects Trainer System (JFETS)
  - Joint Training Center for Fires and Effects Integration
- **Develop Strategic FA Communications**
  - Strategic Communications Plan
  - Shape OIF Lessons Learned
  - Create a Fires Knowledge Network
    - Collaborative Web Based Tool
    - Field Artillery Lead - JFKSWC; BCTP; MEDCOM; Infantry Center

**Integrating Joint Fires and Effects  
Leveraging information Technologies**



# ***Field Artillery Center and School Focus Areas***

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- **Reorganize USAFACFS IAW TRADOC / FORSCOM and IMA Guidance**
  - Field Artillery Center and School Structure
  - Improve Range Capabilities including Joint
  - Improve Infrastructure
  - Plan for Future Missions
  - Joint Training Center for Fires and Effects Integration

**Train Field Artillery and Joint Fires Capabilities**



# ***Future Combat System, Non-Line of Sight Cannon (FCS NLOS)***

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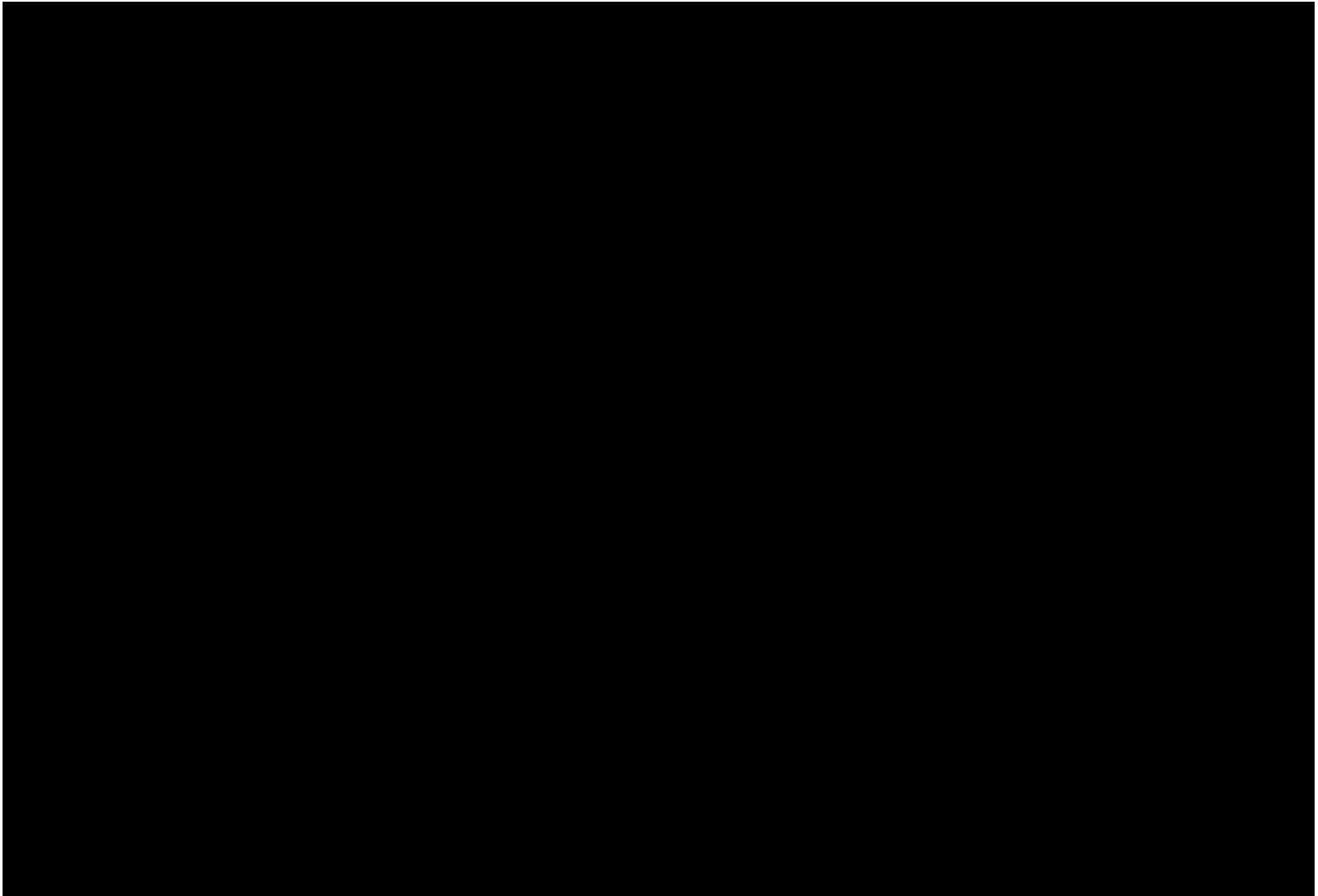
- Pivotal Crusader technologies transferred
- Demonstrator began firing in Sep 03
- Caliber: 155mm selected for demonstrator (lethality, technology, and risk)
- Wheels versus Tracks: Band track selected for the CTD
- 6 –10 Rounds per minute
- Auto-loading capability
- Rapid magazine resupply concept being developed





# ***UD NLOS -Cannon***

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# ***UD NLOS -Cannon***



# ***Conclusions***

- The Field Artillery did an incredible job in OIF
  - The Field Artillery is changing now
- Joint Fires Integration is critical to our future
- The Army will continue to require modernized, trained and ready Field Artillery Units!
- Thanks for what you do for the Field Artillery, our Army and especially for our soldiers!
  - We've got a great conference ahead

**Create the Thunder!**



# ***Field Artillery and Joint Fires Conference***

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**MG Michael D. Maples**  
**Chief of Field Artillery**